

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (original) A method for making a rubber composition comprising:
forming a mixture by combining an uncured or partially cured elastomeric material, a curing agent that reacts with the elastomeric material, and a reactive oligomer;
heating the mixture at a temperature and for a time sufficient to effect vulcanization of the elastomeric material and polymerization of the reactive oligomer, wherein mechanical energy is applied to mix the mixture during the heating step;
wherein the reactive oligomer comprises a compound that polymerizes to form a thermoplastic polymer matrix of the composition.
2. (original) A method according to claim 1, wherein the elastomeric material comprises a fluorocarbon elastomer.
3. (withdrawn) A method according to claim 1, wherein the elastomeric material comprises a diene rubber.
4. (withdrawn) A method according to claim 1, wherein the elastomeric material comprises a silicone rubber.
5. (withdrawn) A method according to claim 1, wherein the elastomeric material comprises an ethylene propylene rubber.

6. (original) A method according to claim 2, wherein the fluorocarbon elastomer is selected from the group consisting of:

VDF/HFP,
VDF/HFP/TFE,
VDF/PFVE/TFE,
TFE/Pr,
TFE/Pr/VDF,
TFE/Et/PFVE/VDF,
TFE/Et/PFVE, and
TFE/PFVE.

7. (original) A method according to claim 6, wherein the fluorocarbon elastomer also comprises cure site monomers.

8. (original) A method according to claim 2, wherein the curing agent comprises a polyol.

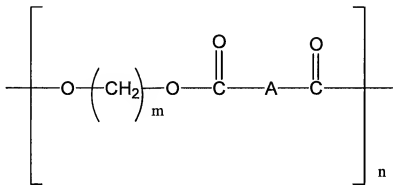
9. (original) A method according to claim 2, wherein the curing agent comprises a peroxide.

10. (withdrawn) A method according to claim 3, wherein the curing agent comprises sulfur.

11. (original) A method according to claim 1, wherein the oligomer polymerizes to form a thermoplastic polyester.

12. (original) A method according to claim 11, wherein the oligomer polymerizes to form polybutylene terephthalate.

13. (original) A method according to claim 11, wherein the oligomer is made by a process comprising combining a polyester linear and a depolymerization catalyst in an organic solvent, wherein the depolymerization catalyst comprises a tin compound or a titanium compound, and wherein the polyester linear is described by the formula



wherein m is from 2 to 10, n is from about 20 to about 500, and A is a divalent radical selected from the group consisting of alkylene, monocyclic aromatic, and polycyclic aromatic.

14. (original) A method according to claim 11, wherein the oligomer is a macrocyclic polyester oligomer.

15. (withdrawn) A method according to claim 1, wherein the oligomer polymerizes to form a thermoplastic polyamide.

16. (original) A method according to claim 1, comprising a continuous process.

17. (original) A method according to claim 16, carried out in a twin screw extruder.

18. (original) A method according to claim 1, comprising a batch process.

19. (withdrawn - currently amended) A method for making a processable rubber composition according to claim 1, comprising

forming a mixture of ~~an~~the uncured or partially cured elastomer material and ~~a~~the reactive oligomer; and

simultaneously curing the elastomeric material and polymerizing the oligomer in the mixture;

wherein the oligomer polymerizes to form a thermoplastic material by ring opening or condensation polymerization.

20. (withdrawn) A method according to claim 19, wherein the oligomer does not react with the elastomer.

21. (withdrawn) A method according to claim 19, wherein the elastomeric material comprises a fluorocarbon elastomer.

22. (withdrawn) A method according to claim 21, comprising curing the fluorocarbon elastomer with a phenolic curing agent.

23. (withdrawn) A method according to claim 21, comprising curing the fluorocarbon elastomer with a peroxide curing system.

24. (withdrawn) A method according to claim 19, wherein the oligomer polymerizes to form a thermoplastic polyester.

25. (withdrawn) A method according to claim 19, wherein the oligomer polymerizes to form polybutylene terephthalate.

26. (withdrawn - currently amended) A method of ~~making a processable rubber composition according to claim 1~~, comprising
combining ~~a~~ the partially cured or uncured elastomeric material, ~~a~~ the curing agent that reacts with the elastomeric material, and ~~a~~ the reactive oligomer;
mixing the combination to form a homogeneous blend; and
heating the blend while mixing to effect cure of the elastomeric material and polymerization of the oligomer;
wherein the oligomer comprises a macrocyclic polyester oligomer.

27. (withdrawn) A method according to claim 26, wherein the elastomeric material comprises a fluorocarbon elastomer.

28. (withdrawn) A method according to claim 26, wherein the elastomeric material comprises a diene rubber.

29. (withdrawn) A method according to claim 26, wherein the oligomer is prepared by depolymerizing polybutylene terephthalate in an organic solvent in the presence of a tin compound or a titanium compound.

30. (withdrawn) A method according to claim 27, wherein the fluorocarbon elastomer comprises repeating units derived from tetrafluoroethylene and propylene.

31. (withdrawn) A method according to claim 27, wherein the fluorocarbon elastomer comprises repeating units derived from vinylidene fluoride and hexafluoropropylene.

32. (withdrawn) A method according to claim 26, comprising a continuous process.

33. (withdrawn) A method according to claim 26, carried out in a twin screw extruder.

34. (withdrawn) A method according to claim 26, comprising a batch process.